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ABSTRACT

This is a report on the North Carolina Advancement School's eight-week summer session for sixth- and seventh-grade boys. The summer session for underachievers was limited to a residential program. The instructional program involved studying humanities, mathematics; science, and the arts with close guidance by a counselor. The results from the summer term show some changes in the boys in residence, which are apparently related to the age and grade of the student. The sixth-grade students showed greater and more consistent gains on measures of reading, achievement, and study skills; in addition, they improved their attitudes towards themselves and the School. Seventh-grade students tended to be more erratic than sixth-graders in terms of their response to the summer term; however, they showed significant gains in oral reading and work-study skills. For related reports, see UD 011 076-078 and 011 080-081. (Author/JW)

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A RESEARCH REPORT OF

THE NORTH CAROLINA ADVANCEMENT SCHOOL:

SUMMER SESSION, 1968

Submitted to the Board of Governors
and the North Carolina State Board of Education

UD011073

Winston-Salem, North Carolina

January, 1969

John N. Bridgman, Jr., Director
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FOREWORD

This report is the second in a series of research reports describing results derived from working with underachieving boys from all parts of the state of North Carolina. It represents our continuing efforts to further define and identify possible causes and remedies of underachievement.

The results as reported in this volume can best be understood with prior knowledge of the contents of the first volume, The North Carolina Advancement School Research Report, Spring, 1968. In addition, it should be understood that one major purpose of this report is to identify trends in behavior rather than to establish definite characteristics. The results as reported herein are most gratifying in that we were able to go beyond the establishment of trends and more nearly realize our ultimate goal. Considering the short duration of the summer session, these results have proved to be most rewarding.

ACKNOWLEDGEMENTS

Gratitude is expressed to the Board of Governors and to the State Board of Education for their continuing support and encouragement and for their meaningful advice and directions in carrying to fruition the purposes of the School as set forth by the North Carolina Legislature. The assistance of Mr. A. C. Davis and Mr. J. E. Miller, who served as special consultants to the Board, has been of particular significance in planning and implementing the program.

Grateful appreciation is extended to Dr. W. Scott Gehman, consultant psychologist from Duke University, and to Dr. Kinnard White, consultant in educational research from the University of North Carolina, for their help in designing this study and for their invaluable assistance in carrying out the objectives of the School.

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CHAPTER I

INTRODUCTION

The 1968 summer session of the North Carolina Advancement School was designed to implement Phase III of its initial proposal to the 1967 Legislature. The major purpose of Phase III was to begin working with younger children in an attempt to further identify possible causes and remedies of underachievement.

On June 17, 1968, forty-two rising sixth-graders and thirty-eight rising seventh-graders were admitted to the Advancement School for a period of eight weeks. The summer session was limited to a residential program, with boys from all parts of the state of North Carolina. For the purpose of this study, the underachiever was defined as any student with average or above-average ability who was not achieving at his expected level as assessed by standardized scores, academic record, and teacher observation. Specifically, the summer program was designed to answer two basic questions:

1. What are the characteristics of sixth- and seventh-grade boys who are not achieving in school?
2. How do sixth- and seventh-grade boys respond to therapeutic and academic treatment?

Answers to these questions were deemed necessary in order to prepare for the fall semester of 1968 in which ninety-six

seventh-grade boys would be invited to attend the Advancement School and to evaluate the feasibility of accepting sixth-graders for a full school term during the spring of 1969.

The Instructional Program.[1] The instructional program implemented during the summer session of 1968 was basically the same as that operated during the spring of 1968. It consisted of three areas:

1. A Humanities Block emphasizing the role of counseling, with learning experiences designed around problems of concern to students.
2. A Learning Center emphasizing skill development in reading and mathematics.
3. An Exploratory Curriculum for study of special interest areas including science, art, music, industrial arts, and physical education.

Each boy was randomly assigned to a House of sixteen students. Under the direction of a Language Arts/Social Studies counselor, each House attended as a group a two-hour block of time, which comprised the Humanities Program. Individuals were assigned to the Exploratory areas according to indicated

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[1] For a more detailed description of the philosophy of the school and its over-all program, see The North Carolina Advancement School Research Report, Spring, 1968, Winston-Salem, North Carolina, August, 1968.

interests and abilities and to the Learning Center on the basis of diagnostic testing.

As a result of the Spring, 1968, Research Report, several changes were implemented during the summer:

1. An assistant counselor was hired for each House to assist the counselor in conducting the dormitory life of the students. The major responsibility of the assistant counselor was to relieve the counselor of menial responsibilities and to assist in the supervision of dormitory living. This allowed the counselor to devote the major portion of his time in the dormitory to counseling (see Appendix for a more thorough description of the role and responsibility of the assistant counselor).
2. Refined diagnostic procedures were utilized to assess specific weaknesses and strengths of individual students. Emphasis was particularly afforded the collection of diagnostic data through individually administered tests.
3. Emphasis was given to the refining of procedures and techniques for individualizing instruction in the academic areas. Several studies are described in more detail in Chapter II.
4. A leadership training program was instituted for fourteen of the eighth-grade boys who had attended

the Advancement School during the spring. One of the responsibilities of these boys was to serve as a junior counselor or "big brother" to five of the younger boys.

In addition to the basic instructional program and the indicated changes, an extensive intramural and recreation program was implemented during the summer session. An arts and crafts program was initiated which emphasized woodworking and leather craft projects.

CHAPTER II

A STATISTICAL ANALYSIS OF THE NORTH CAROLINA ADVANCEMENT SCHOOL SUMMER PROGRAM AND ITS STUDENTS

The research conducted at the North Carolina Advancement School during the summer attempted to answer two basic questions:

1. What are the characteristics of sixth- and seventh-grade boys who are not achieving in school, and in what ways do they compare with eighth-grade boys?
2. How do sixth- and seventh-grade boys respond to therapeutic and academic treatment?

The research conducted was basically descriptive, with comparisons of response to the treatment and to the residential school environment. The groups consisted of forty-two rising sixth-grade boys and thirty-eight rising seventh-grade boys from all parts of the state of North Carolina.

I. COLLECTION OF THE DATA

The design of the study utilized pre-test and post-test situations. Pre-test data were collected in June, 1968, and post-test data in August, 1968. The following tests were given to all students enrolled for the summer session:

1. The Slosson Intelligence Test.[2] An individually administered measure of general intelligence was obtained for each student at the beginning of the summer term on the occasion of the pre-test.
2. Reading tests. The Gates Reading Survey[3] and the Gilmore Oral Reading Test[4] were administered to all students to measure level of work recognition, comprehension, and oral reading.
3. Achievement measures. One traditional measure of achievement (the STEP Writing) and two measures of work-study skills were used. STEP Writing[5] is designed to assess the pupil's ability to think critically in writing, to organize materials, to write material appropriate for a given purpose, and to observe conventional usage in punctuation and

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[2] Richard L. Slosson, The Slosson Intelligence Test (SIT) for Children and Adults, East Aurora, New York: Slosson Educational Publications, 1963.

[3] The Gates Reading Survey (revised), Columbia University: Bureau of Publications, 1960.

[4] John V. Gilmore, Gilmore Oral Reading Test, New York: Harcourt, Brace and World, Inc., 1951.

[5] Sequential Tests of Educational Progress: Writing, Princeton, N. J.: Cooperative Test Division, Educational Testing Service, 1957.

grammar. The SRA Work-Study Skills Test[6] was used as a measure of the student's competence in the activities judged to be necessary to succeed in the academic requirements of the school and was administered in two parts. References measured competence in the use of table of contents, indices, and general reference materials. Charts measured competence in interpreting various types of charts, maps, graphs, and tables.

4. Personality measures. Since one of the major outcomes of the spring report was the high correlation between personality variables and achievement variables, observations of several personality dimensions were made during the summer of 1968. The following tests were used:

   a. The Tennessee Self Concept Scale.[7] This is an instrument measuring self-concept, yielding several categories of scores. Sub-scales on the tests are: self-criticism, total positive, identity, self-satisfaction, behavior, physical self, moral-ethical self, personal self, family self, social self, variability, and distribution. (For a description of each individual scale see Appendix.)

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[6] Science Research Associates Achievement Series: Work-Study Skills, Chicago: Science Research Associates, 1964.

[7] William H. Fitts, Tennessee Self Concept Scale, Nashville: Counselor Recordings and Tests, 1965.

b. The California Test of Personality.[8] This test yields three scores, all of which may be considered as indicators of adjustment. The three scores are: Total, which is a measure of adjustment in various situations; Personal, which is a measure of adjustment related to the individual's personality; and Social, which is a measure of adjustment in social settings.

c. Semantic Differentials.[9] The semantic differential technique was employed in asking the student to evaluate himself in three different situations: at school, at home, and ideal self. In addition, the semantic differential technique was used in asking the student to evaluate teachers in general and to evaluate the North Carolina Advancement School.

d. School Alienation. The Intellectual Achievement Responsibility Scale[10] was used to measure the extent to which the student felt alienated from school. The IAR Scale is designed to assess the degree to which the student feels that he is responsible for his school successes and failures or whether he feels that forces outside of his control are responsible.

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[8] Lewis P. Thorpe, Willis W. Clarke, and Ernest W. Tiegs, California Test of Personality, Monterey, California: California Test Bureau (a division of McGraw-Hill Book Company), 1942.

[9] Based on the original work by C. E. Osgood, G. Soci, and P. Tannenbaum, The Measurement of Meaning, Urbana, Ill.: University of Illinois Press, 1957. The actual items came from a study conducted with elementary school children using this technique. See Daniel C. Neale and J. M. Proshek, "School Related Attitudes of Culturally Disadvantaged Elementary School Children," Journal of Educational Psychology, 58: 238-244, 1967.

[10] Virginia J. Crandall, W. Kathovsky, and S. Preston, "Motivational and Ability Determinants of Young Children's Intellectual Achievement Behaviors," Child Development, 33: 643-661, 1962.

II. RESULTS OF THE STUDY

The pre-test means and standard deviations for each of the tests administered during the summer are recorded in Table 1. The means and standard deviations for sixth- and seventh-grade students are reported separately. An analysis of these data yielded the following results in the areas indicated:

Reading. Pre-test measures were administered to both sixth- and seventh-graders for vocabulary, comprehension, and oral reading. All scores have been reported as grade level performances. An investigation of Table 1 clearly indicates that both sixth- and seventh-grade students attending the Advancement School during the summer were performing at least one grade level below the grade level to which they were being promoted in September of 1968. In addition, it may be observed in Table 1 that both sixth- and seventh-grade groups were scoring well within the normal range of general intelligence, indicating that the reading problem was not one of lack of general ability, but rather a failure to develop adequately the ability to perform the task of reading well enough to cope with academic tasks of the public school.

Achievement. The converted score for the STEP Writing Test reported in Table 1 converts to a percentile band of

TABLE 1

MEANS AND STANDARD DEVIATIONS FOR EACH OF THE MEASURES GIVEN ON THE OCCASION OF THE BEGINNING OF THE SUMMER TERM (1968) FOR SIXTH- AND SEVENTH-GRADE STUDENTS

Test	Sixth (N=36) $\bar{X}$	Sixth (N=36) Standard Deviation	Seventh (N=35) $\bar{X}$	Seventh (N=35) Standard Deviation
Intelligence	106.17[a]	14.31	104.50	14.55
Vocabulary	4.7[b]	9.40	6.0[b]	10.20
Comprehension	4.2[b]	9.52	5.2[b]	9.50
Oral Reading	4.3[b]	1.02	5.7[b]	1.84
Writing	245.06[c]	9.39	252.00[c]	12.66
SRA Work-Study Skills Test				
Study Skills-References	15.14	7.00	13.97	7.29
Study Skills-Charts	13.29	6.49	12.86	4.13
Tennessee Self Concept Scale[d]				
Self-Criticism	47.58	9.56	47.34	10.33
Total Positive	42.50	11.44	43.88	13.60
Identity	38.97	14.77	42.20	15.09
Self-Satisfaction	47.27	11.97	49.94	13.63
Behavior	41.98	12.29	41.71	13.24
Physical Self	44.44	14.44	47.03	13.72

a - Intelligence Quotient
b - Grade Level
c - Converted Score
d - T scores
Note: All other measures are reported as raw scores.

TABLE 1 (Continued)

Test	Sixth (N=36) $\bar{X}$	Sixth (N=36) Standard Deviation	Seventh (N=35) $\bar{X}$	Seventh (N=35) Standard Deviation
Tennessee Self Concept Scale[d] (Continued)				
Moral-Ethical Self	39.22	11.72	38.40	13.08
Personal Self	44.11	12.45	48.60	14.25
Family Self	43.39	12.23	44.17	13.28
Social Self	39.72	14.12	41.57	11.98
Variability	52.14	8.88	53.31	10.06
Distribution	50.97	13.38	54.54	14.14
California Test of Personality[d]				
Total	40.89	7.05	43.26	7.86
Personal	41.67	6.77	44.86	9.51
Social	38.94	9.08	42.34	7.93
Semantic Differential				
Self at School	39.81	6.96	41.83	8.44
Self at Home	40.56	6.38	44.66	10.70
Ideal Self	47.97	8.16	51.91	4.81
Teachers	41.68	7.94	43.15	8.02
NCAS	44.37	8.45	49.20	7.04
Intellectual Achievement Responsibility Scale				
IAR (Positive)	12.64	3.02	14.05	5.33
IAR (Negative)	11.61	2.85	12.86	5.87
IAR (Total)	25.08	7.36	26.88	10.58

15-30 for the sixth-grade group and to a percentile band of 25-45 for the seventh-grade group. This may be interpreted to mean that the average sixth- and seventh-grade student performed much poorer on this measure of writing achievement than the normative sixth- and seventh-grade groups.

Similar results were observed on the SRA Work-Study Skills Test. The sixth-graders scored at the eighteenth percentile on References and the seventeenth percentile on Charts. The seventh-graders performed at the eleventh percentile on References and the twenty-second percentile on Charts. Measures for both groups indicate lack of appropriate study skills necessary for school achievement.

Personality. On three scales of the Tennessee Self Concept Scale (those of self-criticism, variability, and distribution), the means of the North Carolina Advancement School groups compared favorably to the normative group ($\overline{X} = 50$). This indicated that the two Advancement School sample groups were answering honestly, consistently, and with an average amount of certainty.

Scores on those scales designed to assess how the individual views various aspects of himself were consistently low for both sixth- and seventh-grade groups. This may be interpreted to mean that the boys in the Advancement School sample had an unfavorable view of themselves in a wide variety of

contexts including identity, behavior, physical self, moral-ethical self, personal self, family self, and social self. The mean score of self-satisfaction for the Advancement School group compared favorably to the normative group. This indicated that the Advancement School group tended not to be overly concerned about the way they viewed themselves in the preceding situations; rather, they tended to accept themselves for what they saw themselves to be.

Comparisons with the normative mean for the California Test of Personality ($\bar{X}$ = 50) indicated that the Advancement School students scored well below the average student on personal adjustment and social self.

Although no norms exist for the various semantic differentials, one observation can be made. For both sixth- and seventh-graders, the difference between the mean scores of Ideal Self and Self at Home is greater than for any other evaluation of self (a high score indicates a more favorable view of the object of concern). It should be noted that the scale range was from 11 to 55. Also, the mean scores obtained by residential boys in the eighth grade at the Advancement School in the spring of 1968 were: Self at School = 39.68; Self at Home = 42.16; Ideal Self = 50.92. These means correspond quite closely to the means obtained with the summer sample of sixth- and seventh-grade boys.

Norms for the Intellectual Achievement Responsibility Scale are reported for small groups only and yielded the following means for a normative group of eighth-grade boys: positive scale = 13.08, negative scale = 12.31, total scale = 25.38. The means for the eighth-grade residential students at the Advancement School in the spring of 1968 were: positive = 11.90, negative = 11.33, total = 23.23. The students in the present study tended to feel more responsible for their school achievement than did the eighth-grade boys who attended the Advancement School in the spring of 1968. The group of sixth- and seventh-graders at the Advancement School in the summer obtained mean scores quite similar to the group of sixth- and seventh-graders in more typical school settings. For example, normative scores for sixth-graders are reported as follows: positive scale = 12.99, negative scale = 11.75, total scale = 24.74.

Comparisons of Pre-Test and Post-Test Means for Sixth- and Seventh-Grade Pupils. Table 2 represents the means and standard deviations for sixth-grade pupils for each test administered at the beginning and end of the summer session, 1968. Correlated *t* tests were used to test for differences between the means obtained through pre- and post-testing. There were thirty-six sixth-grade students for which pre- and post-test data were complete. Significance levels were

TABLE 2

SIGNIFICANCE OF CHANGE BETWEEN PRE-TEST AND POST-TEST OCCASIONS FOR SIXTH-GRADE STUDENTS (SUMMER 1968)
(N = 36)

Test	Pre $\bar{X}$	SD	Post $\bar{X}$	SD	t
Vocabulary	4.7[b]	14.31	5.0[b]	7.91	1.390[1]
Comprehension	4.2[b]	9.52	5.2[b]	9.45	3.351[4]
Oral Reading	4.3[b]	1.02	5.4[b]	1.69	5.321[4]
Writing	245.06[c]	9.39	248.97[c]	14.44	2.177[3]
SRA Work-Study Skills Test					
Study Skills-References	15.14	7.00	17.53	8.07	2.250[3]
Study Skills-Charts	13.29	6.49	16.16	7.18	2.321[3]
Tennessee Self Concept Scale[d]					
Self-Criticism	47.58	9.56	48.08	8.67	0.269
Total Positive	42.50	11.44	43.11	12.05	0.514
Identity	38.97	14.77	42.36	14.52	1.825[2]
Self-Satisfaction	47.27	11.97	48.08	12.39	0.555
Behavior	41.98	12.29	39.80	10.95	1.310[1]
Physical Self	44.44	14.44	45.81	13.67	0.908

b - Grade Level
c - Converted Score
d - T scores

1 - $p < .25$
2 - $p < .10$
3 - $p < .05$
4 - $p < .01$

TABLE 2 (Continued)

Test	Pre $\bar{X}$	SD	Post $\bar{X}$	SD	t
Tennessee Self Concept Scale[a] (Continued)					
Moral-Ethical Self	39.22	11.72	39.61	11.97	0.222
Personal Self	44.11	12.45	47.08	11.93	1.643[1]
Family Self	43.39	12.23	44.75	11.65	0.906
Social Self	39.72	14.12	43.08	10.29	1.681[1]
Variability	52.14	8.88	50.14	10.86	1.024
Distribution	50.97	13.38	48.78	14.68	1.184
California Test Of Personality[a]					
Total	40.89	7.05	41.83	7.22	0.956
Personal	41.67	6.77	42.97	7.73	1.338[1]
Social	38.94	9.08	38.89	6.99	0.043
Semantic Differential					
Self at School	39.81	6.96	41.50	7.35	1.657[1]
Self at Home	40.56	6.38	45.17	6.54	4.640[4]
Ideal Self	47.97	8.16	50.48	6.14	2.263[3]
NCAS	44.37	8.45	47.20	7.46	2.139[3]
Intellectual Achievement Responsibility Scale					
IAR (Positive)	12.64	3.02	13.05	3.09	1.274
IAR (Negative)	11.61	2.85	11.67	2.89	0.133
IAR (Total)	25.08	7.36	24.72	5.01	0.327

reported as high as p = .25 because these data were viewed as being exploratory. Due to the short length of the summer session, it was of importance to identify trends which might be indicated from the data and to assess the applicability of these trends for a longer term.

Generally, sixth-grade students evidenced significant progress in the area of reading. Highly significant gains were made in comprehension and oral reading, while a trend in the positive direction was clearly established for vocabulary. During the eight-weeks summer session, the sixth-grade students increased three months in vocabulary, one year in comprehension; and one year, one month in oral reading. In addition, the sixth-grade boys made significant gains on each of the three measures of achievement: STEP Writing, SRA Work-Study Skills - References, and SRA Work-Study Skills - Charts.

Scores on the Tennessee Self Concept Scale for sixth-graders were highly stable during the summer session. Slight positive gains were evidenced on the identity scale, the personal self scale, and the social self scale, while a slight negative gain was evidenced on the behavior scale. All of these gains were significant at the .25 level of confidence. There were essentially no gains on the California Test of Personality for sixth-graders. A slight trend was indicated by a small gain on the Personal Adjustment Scale significant at the .25 level of confidence. The students' perception of

themselves tended to change during the summer term. At the end of the summer, sixth-graders saw themselves more favorably at school, more favorably at home, and had a higher goal set for an ideal self. They also viewed the Advancement School more favorably than when they entered. With the exception of the sub-scale, Me at School, all gains were significant at the .05 level of confidence. No statistically significant changes were reported for the IAR Scale which purported to measure the degree of school alienation of the individual.

The means and standard deviations for the seventh-grade students for each of the tests administered at the beginning and end of the summer, 1968, session are observed in Table 3. Correlated *t* tests were employed to test for any difference between the means obtained from the two testing occasions. Thirty-five seventh-grade students completed both the pre- and post-tests. Significance levels are reported as high as $p = .25$.

Unlike the sixth-grade students, the response of the seventh-grade students to the summer reading program was varied. A negative gain in vocabulary was found to be significant at the .05 level of confidence. No statistically significant change was observed on a comprehension test, while a positive gain in oral reading was significant at the .01 level of confidence. The same pattern held true for measures of achievement. The seventh-grade boys

TABLE 3

SIGNIFICANCE OF CHANGE BETWEEN PRE-TEST AND POST-TEST OCCASIONS FOR SEVENTH-GRADE STUDENTS (SUMMER 1968)
(N = 35)

Test	Pre $\bar{X}$	SD	Post $\bar{X}$	SD	t
Vocabulary	6.0[b]	10.20	5.5[b]	12.14	-2.611[3]
Comprehension	5.2[b]	9.50	5.2[b]	10.83	0.526
Oral Reading	5.7[b]	1.84	6.6[b]	1.75	3.603[4]
Writing	252.00[c]	12.67	245.91[c]	10.90	4.019[4]
SRA Work-Study Skills Test					
Study Skills-References	13.97	7.29	18.97	9.14	3.664[4]
Study Skills-Charts	12.86	4.14	15.07	5.55	2.450[4]
Tennessee Self Concept Scale[d]					
Self-Criticism	47.34	10.33	47.40	5.93	0.033
Total Positive	43.88	13.60	47.37	14.14	1.497[1]
Identity	42.20	15.09	45.06	16.33	1.089
Self-Satisfaction	47.94	13.63	52.28	15.66	1.890[2]
Behavior	41.71	13.24	44.74	13.57	1.178
Physical Self	47.03	13.72	51.26	17.12	1.689[2]

b - Grade Level
c - Converted Score
d - T scores

1 - $p < .25$
2 - $p < .10$
3 - $p < .05$
4 - $p < .01$

TABLE 3 (Continued)

Test	Pre $\bar{X}$	SD	Post $\bar{X}$	SD	t
Tennessee Self Concept Scale[d] (Continued)					
Moral-Ethical Self	38.40	13.08	43.34	11.81	2.219[3]
Personal Self	48.60	14.26	52.23	16.26	1.393[1]
Family Self	44.17	13.28	47.08	13.16	1.164
Social Self	41.57	11.98	44.74	12.50	1.293
Variability	53.31	10.06	52.80	11.86	0.233
Distribution	54.54	14.14	54.37	16.31	0.073
California Test Of Personality[d]					
Total	43.26	7.86	42.29	9.53	0.929
Personal	44.86	9.51	44.46	9.89	0.328
Social	42.34	7.93	39.57	9.57	-2.314[3]
Semantic Differential					
Self at School	41.83	8.44	41.66	7.70	0.121
Self at Home	44.66	10.70	45.77	6.81	0.524
Ideal Self	51.91	4.81	50.71	6.97	1.037
NCAS	49.21	7.04	48.09	8.68	0.866
Intellectual Achievement Responsibility Scale					
IAR (Positive)	14.06	5.33	15.31	7.23	0.772
IAR (Negative)	12.86	5.87	12.02	2.78	0.901
IAR (Total)	26.88	10.58	25.68	4.72	0.718

regressed on the STEP Writing Test, significant at the .01 level of confidence, but evidenced significant positive gains on the SRA Work-Study Skills - References and the SRA Work-Study Skills - Charts.

Change on the Tennessee Self Concept Scale was consistent and more pronounced for the seventh-graders than for the sixth-graders. Significant positive changes were observed on the following scales: total positive, self-satisfaction, physical self, moral-ethical self, and personal self. The California Test of Personality showed a significantly lower score on the social adjustment scale at the end of the summer session than at the beginning for seventh-grade boys.

Changes in self-concept as related to home, school, ideal self, and perception of the North Carolina Advancement School were all non-significant. In addition, the Intellectual Achievement Responsibility Scale yielded changes that were non-significant for seventh-graders.

Summary. The summer term at the North Carolina Advancement School did result in some changes in the boys in residence. The change appeared to be related to the age and grade of the student. The sixth-grade students showed greater and more consistent gains on the measures of reading, achievement, and study skills. The sixth-grade students also showed significant positive changes in how they viewed themselves at school, at

home, and the ideal they set for themselves. In addition, they gained in the positive direction toward their view of the Advancement School.

Although not statistically significant, some positive trends were established for sixth-graders' self-concepts as measured by the Tennessee Self Concept Scale.

Seventh-grade students tended to be more erratic than sixth-graders in terms of their response to the summer term. They showed significant gains on oral reading and work-study skills assessments. Also, they evidenced significant regression on writing achievement and vocabulary. They showed no change in how they viewed themselves at school, home, or the ideal they set for themselves, nor did they change in their evaluative view of the Advancement School. Some consistent trends in change for the seventh-grade students on the dimensions of the self-concept measured by the Tennessee Self Concept Scale were established.

III. OTHER RESEARCH

In addition to the overall research design implemented during the summer of 1968, several academic departments conducted studies related to their subject areas. Analysis of the data collected during the summer revealed some interesting aspects of self-concept as related to art. The science department undertook an exploratory study attempting to relate

achievement in science to an individualized approach to teaching.

An analysis of data on reading skills has been presented previously. At present, these data together with additional data are being analyzed further. A report on this analysis is being prepared for possible publication and will be submitted as a supplement to this volume at a later date.

Art and Self-Concept. The summer art program was designed to expand the student's personal assurance through a series of graphic problems involving materials that could be easily accessible in local communities throughout the state of North Carolina. A student who found a sense of achievement or pleasure in a particular medium would be able to continue working with this medium after leaving the Advancement School. Each student was allowed to select those materials with which he wished to work. Emphasis was placed upon the use of these materials in creative expression of ideas as opposed to a rigid set of rules by which to use certain art materials. In addition, emphasis was placed on art projects which could be completed in a relatively short period of time.

The instrument used to assess the effect of the art program in improving self-concept was the Tennessee Self Concept Scale. Students used in this analysis were selected in the following manner. Of the seventy-one students

completing the 1968 summer session, those who elected industrial arts were eliminated. This procedure was used because the industrial arts program was similar in nature to the art program and because preliminary observations indicated that students who took industrial arts evidenced negative changes in self-concept. Therefore, these students were eliminated from the analysis in order to avoid contaminating the sample. Out of the thirty-six remaining students, sixteen elected art, whereas twenty of those students did not. The two groups were compared, using sub-scales on the Tennessee Self Concept Scale.

The analysis used to determine the effects of the art course on self-concept was a multi-variate analysis of covariance. The covariates were scores on each of the Tennessee Self Concept Scales obtained during pre-testing. The criteria were scores on the same Tennessee Self Concept Scales obtained during post-testing. The purpose of the covariates was to adjust the post-test scores to account for the effects of differential beginning points of students taking or not taking art.

Table 4 presents the pre- and post-test scores for each of the groups, including the standard deviation for each of the scores. It may be observed that very little difference existed between the two groups on the pre-test.

Table 5 presents F scores on each of the sub-scales representing the degree of significant difference between the

TABLE 4

MEANS AND STANDARD DEVIATIONS FOR PRE- AND POST-TEST OF THE TENNESSEE SELF CONCEPT SCALES FOR ART AND NO-ART STUDENTS - SUMMER, 1968

Criteria	Art (N = 16)				No Art (N = 20)			
	Pre-Test		Post-Test		Pre-Test		Post-Test	
	$\bar{X}$	S	$\bar{X}$	S	$\bar{X}$	S	$\bar{X}$	S
Self-Criticism	45.12	7.78	46.06	7.71	50.95	11.33	47.45	6.92
Total Positive	42.50	12.52	53.62	11.43	45.30	13.20	42.05	13.12
Identity	40.63	13.91	51.44	10.53	43.25	17.10	40.55	16.92
Self-Satisfaction	46.94	14.64	58.75	14.55	49.30	13.47	46.55	12.36
Behavior	41.75	13.70	48.88	11.41	42.50	11.48	38.00	12.01
Physical Self	47.62	13.84	57.94	14.60	45.35	13.73	45.00	16.29
Moral-Ethical Self	40.37	15.13	47.06	13.55	40.40	12.22	36.55	8.14
Personal Self	44.25	13.97	59.19	13.21	48.60	14.07	45.35	13.67
Family Self	44.00	13.87	49.44	12.80	43.00	13.58	44.40	13.68
Social Self	38.56	10.65	50.69	8.60	42.00	14.60	42.90	11.77
Variability	56.69	8.56	53.56	9.78	51.35	8.40	51.10	9.61
Distribution	56.75	10.69	59.81	11.42	51.00	16.85	47.90	17.24

TABLE 5

ANALYSIS OF COVARIANCE COMPARING ART STUDENTS WITH THOSE NOT TAKING ART FOR EACH OF THE CRITERIA ON THE TENNESSEE SELF CONCEPT SCALE

Variable	F (df=1,22)**	P
Self-Criticism	0.04	.84
Total Positive	13.13	.002*
Identity	5.91	.02*
Self-Satisfaction	16.93	.001*
Behavior	7.76	.01*
Physical Self	2.89	.10
Moral-Ethical Self	16.81	.001*
Personal Self	13.19	.001*
Family Self	2.56	.12
Social Self	6.92	.01*
Variability	0.39	.54
Distribution	1.74	.20

*$p < .05$ is considered statistically significant.

**df = degrees of freedom

two groups and the level of confidence for each sub-score. Differences were accepted as being significant at the .05 level of confidence and beyond. On seven of the sub-scales this difference was found to be statistically significant. It should be noted that in each case the difference was in favor of the group of students who elected to take art. Theoretically, a difference would not be expected on the self-criticism, variability, and distribution sub-scales, as these scales are intended to measure reliability of the instrument. Reference to Table 5 supports this reasoning. The two remaining scales, physical self and family self, approached significance, again in favor of the students who elected art. Generally, there was a standard deviation difference between the art student and the student not taking the art post-test. It should be noted that art students scored near the national norm on the post-test, whereas the group not electing to take art remained about one standard deviation below the norm.

Generally, it would appear that art experiences resulted in a positive increase in the student's self-concept. It is difficult to discern reasons for this phenomenon; and, therefore, a replication of this study is currently underway using refined techniques and procedures aimed at isolating variables which might contribute to this phenomenon.

The Relationship Between Science Achievement and An Individualized Approach to Science Teaching. During the summer

program, twenty-seven sixth- and seventh-graders elected to take science. Students were divided into two classes. Each was allowed to select an area of interest in which he wanted to do research. After this area was selected, each student proposed the type of research he wanted to attempt in this area. Students were guided by the instructor and were encouraged to find ideas in various source materials found in the science department and in the school library. Students worked as research scientists in areas of photography, conditioning animals in running a maze, regeneration of planeria, growth rate of plants, hydroponics, dietary experiments, environmental control of plants and animals, dissection, ion identification, crystallization, transpiration, difference between eyesight in golden and albino hamsters, weather forecasting, growth rate of mice, and bacteria growth. A student who needed special apparatus for accomplishing his research was encouraged to design and construct it. Students were sent to the art department, industrial arts department, the electronics laboratory, and other departments as necessity demanded. They were encouraged to go to the library any time during or after class to acquire needed information.

Each student was administered the Sequential Tests of Educational Progress: Science,[11] using a pre-test, post-test

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[11] Sequential Tests of Educational Progress: Science, Princeton, N.J.: Cooperative Test Division, Educational Testing Service, 1957.

design. The students were divided into two groups according to grade level, with the change in pre- and post-scores for sixth-graders being analyzed separately from those of seventh-graders.

Table 6 presents pre- and post-scores for both groups and percentile ranks. It should be noted that both groups showed a substantial increase in percentile rank.

The statistical technique used in assessing the significance of change was the correlated *t* test. Table 7 presents these data. It may be observed that the change for sixth- and seventh-graders was not statistically significant. However, the change in pre- and post-test scores for sixth-graders is significant at the .25 level of confidence, which is indicative of a growth trend in achievement. Considering the short period of time to which students were subjected to this treatment, this change was viewed as quite promising. Therefore, a refined and more extensive research project is currently in progress in individualizing science for seventh-graders.

TABLE 6

CONVERTED SCORES AND PERCENTILE BANDS FOR PRE AND POST STEP SCIENCE FOR SIXTH AND SEVENTH GRADERS

Grade Level	N	Pre-test	Percentile Band	Post-test	Percentile Band
Sixth	14	252.2	25 - 47	256.4	32 - 60
Seventh	9	258.5	26 - 50	263.6	36 - 64

TABLE 7

CORRELATED *t* TESTS ANALYZING CHANGES IN RAW SCORES BETWEEN PRE AND POST STEP SCIENCE FOR SIXTH AND SEVENTH GRADERS

Grade Level	N	Raw Score Change	*t*
Sixth	14	2.14	1.29*
Seventh	9	1.50	0.79

*$p < .25$ was considered indicative of directional trend although not statistically significant.

CHAPTER III

RESEARCH IN PROGRESS AND NEEDED RESEARCH

Currently, eight research projects are being conducted by the staff of the North Carolina Advancement School with seventh-grade boys admitted during September of 1968. Emphasis is being placed on the development of self-concept through treatments in specific academic areas. The following summaries describe the projects now under study:

1. The science department is comparing two different approaches to instruction. One group taught through a role-assumption approach will work independently on a self-selected research project, assuming the role of science researchers. This group will be unstructured, receiving no lectures and laboratory sessions unless directly related to their project. The second group, taught through a semi-structured approach, will choose a research project, but will receive structured science experiences. These groups, along with the control group, will receive pre- and post-tests to determine the effectiveness of the two approaches and to assess changes in self-concept, attitudes, achievement, and critical thinking attributed to the approach.

2. The music department is studying differences in skills learned and interest created through two different approaches to teaching. One group is receiving group-oriented instruction only. The second group is receiving individual instruction and independent practice.
3. Research in industrial arts is attempting to determine which of two programs is more effective in the development of self-concept. One group of industrial arts students is being taught in a structured, directive program with organized requirements and objectives. The second group is being taught through a non-directive, creative, and independent approach with students working at their own speed and on original, self-selected projects.
4. The mathematics department is comparing two approaches to teaching mathematics, the discovery approach and the direct-presentation approach. Pre- and post-testing will help determine changes in self-concept, attitude, and achievement.
5. The art department is conducting research aimed at determining the value of utilizing art materials during counseling sessions. Students will be divided into two groups. One will have art materials

on hand to use if they wish; the other one will not. Pre- and post-testing will determine which group progresses more in positive expression and improvement of self-concept. The art teachers will also attempt to determine if, through a student's art work, his basic method of learning can be evaluated. The teachers will evaluate the student's learning method, kinesthetic, visual, or auditory, and then compare their evaluations with those of other departments. In addition, a replication of the study conducted this past summer is being attempted.

6. The reading and physical education departments are working cooperatively to determine whether reading ability can be aided through improvement of motor coordination, perception, or both. Students with severe reading difficulties have been divided into four groups, and pre- and post-testing will be administered to each group.
7. All counselors at the Advancement School are attempting to find a method of measuring behavioral change in students. Using a scale designed by the Advancement School staff, they are recording periodically any significant observed behavior (see Appendix). The counselors are keeping a daily record of their observations during block period. It is hoped that through these

records the school can determine what counseling methods are most effective and also obtain uniformity in compiling case studies of the students.

8. The Coordinator of Guidance and Counseling is also planning to work in encounter groups with teachers and students. The students will be divided into three groups. One group will meet in the encounter group with their teachers. One group, taught by these same teachers, will not participate in an encounter group. A control group will be composed of students not having classes under the teachers involved nor participating in encounter groups. Pre- and post-test results will be studied to determine whether students improve more when placed in an encounter group situation with their teacher or when meeting in the classroom situation only.

In addition to the preceding, plans are now being completed for follow-up studies of students who attended the 1968 spring term. This follow-up, to be conducted during May, 1968, will attempt to measure the effectiveness of the student's stay at the Advancement School. A general follow-up will be made of all experimental and control students. Thirty students from each group will be selected for an in-depth follow-up study which will include additional testing and interviews with the students and their parents.

CHAPTER IV

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

One of the most critical needs related to the phenomenon of underachievement is that of identifying young children who possess those characteristics thought to contribute to the phenomenon early enough in their school life to be able to apply appropriate preventive treatments. This would enable the schools to stop the problem more nearly at the source and thereby to reduce the possibility of a child becoming an underachiever through a large number of failing experiences causing this phenomenon to become virtually irreversible.

This report represents an exploratory research experiment designed to identify characteristics of underachievement in younger children and to assess the appropriateness of a theoretically conceived therapeutic program.

I. SUMMARY

During the summer session of 1968, forty-two rising sixth-graders and thirty-eight rising seventh-graders were admitted to the Advancement School for a period of eight weeks. The specific purpose of the summer program was to answer two basic questions:

1. What are the characteristics of sixth- and seventh-grade boys who are not achieving in school?

2. How do sixth- and seventh-grade boys respond to therapeutic and academic treatment?

These boys were admitted to the Advancement School as underachievers based on standardized test scores, academic records, and teacher observations. The summer school was limited to a residential program and included boys from all areas of the state of North Carolina. The final selection of students was achieved through random selection from the qualified applicants.

The instructional program implemented during the summer was basically the same as that which operated during the spring of 1968. It consisted of a humanities block emphasizing the role of counseling, a learning center devoted to skill development in reading and mathematics, and an exploratory curriculum for study of special-interest areas.

Several recommendations resulting from the research report compiled during the spring of 1968 were implemented during the summer. For example, six assistant counselors were employed to assist counselors in supervising the dormitory life of students. Refined diagnostic procedures were utilized to assess specific weaknesses and strengths of individual students, with particular emphasis being given to the collection of diagnostic data through individually administered tests. Emphasis was afforded the refining of procedures and techniques for individualizing instruction in academic areas. The recreation

program was expanded to include an extensive arts and crafts program emphasizing woodworking and leathercraft projects.

Design of the Study. The research design was intended to facilitate the evaluation of the summer program and to accomplish the following:

1. The systematic collection of data relative to the phenomenon of underachievement in sixth- and seventh-grade boys and a comparison of these data with those accumulated on eighth-grade boys during the spring of 1968.
2. The systematic collection of data to assess the significance of changes occurring on measures of achievement, aptitude, and personality variables between the beginning of the summer term and the end of the summer term for sixth-graders and seventh-graders.
3. The collection of data to identify promising trends in working with younger underachieving boys for a longer period of time.

Complete pre- and post-test data were collected on thirty-six sixth-graders and thirty-five seventh-graders. The Slosson Intelligence Test was administered individually at the beginning of the term. The Gates Reading Survey, The Gilmore Oral Reading Test, The STEP Writing Test, The SRA Work-Study Skills Test,

The Tennessee Self Concept Scale, The California Test of Personality, several semantic differentials, and The Intellectual Achievement Responsibility Scale were administered to all students as pre- and post-tests. In addition, the STEP Science Test was administered to all students electing to take science.

In addition to the basic study already described, several other investigative studies were conducted during the summer term. A research project in art attempted to evaluate the extent to which exposure to specific art experiences enhanced the self-concept of the individual student. A study conducted by the science department attempted to relate science achievement to an individualized approach to science teaching. Data collected through the reading program are currently being subjected to further analyses. A report on these analyses is being prepared for possible publication and will be submitted as a supplement to this volume at a later date.

The statistical techniques used to analyze the data were the following:

1. A multi-variate analysis of covariance.
2. The correlated t test.
3. Descriptive comparisons when applicable.

Changes between pre- and post-measures were considered statistically significant at the .05 level of confidence. Changes significant to the .25 level of confidence have been reported as being indicative of promising trends.

II. CONCLUSIONS

The following conclusions were derived from the analyses of data collected:

1. The academic and psychological characteristics of the sixth- and seventh-grade boys in attendance at the Advancement School during the summer were found to be quite similar to those characteristics of the eighth-grade boys attending the Advancement School during the spring of 1968. Sixth- and seventh-grade groups scored well within the normal range of general intelligence, while performing at least one grade level below the grade level to which they were being promoted in September. This held true in the areas of vocabulary, comprehension, and oral reading. On measures of achievement, the sixth- and seventh-grade boys scored well below the norm on measures of writing achievement and work-study skills. These data were collected at the beginning of the summer term. Personality tests administered at the beginning of the summer term indicated that the sixth- and seventh-grade groups saw themselves unfavorably in a wide variety of contexts including identity, behavior, physical self, moral and ethical self, personal self, family self, and social self. In

addition, personal adjustment scores were well below the norm. On measures of self-concept collected at the beginning of the term, sixth- and seventh-graders saw themselves unfavorably in school and school-related activities, unfavorably at home, and possessed negative attitudes toward themselves as they would like to be. All of the preceding data are strikingly similar to the data collected on the eighth-grade boys in attendance at the Advancement School during the spring of 1968.

2. Pre-test scores on the Intellectual Achievement Responsibility Scale indicate that the sixth- and seventh-grade students felt reasonably responsible for their school achievement. In addition, these students tended to feel much more responsible for their school achievement than did the eighth-grade boys who attended the Advancement School in the spring of 1968.

3. Sixth-grade students evidenced significant progress in the area of reading. Highly significant gains were noted in the area of comprehension and oral reading. The sixth-grade group also made significant gains on writing achievement and work-study skills. A trend in the positive direction was clearly established for gains in vocabulary.

4. Changes on personality variables for sixth-graders during the summer were very slight. Positive trends were established in the areas of identity, personal self, and social self. A negative trend was observed on the behavior scale of the Tennessee Self Concept Scale. A slight positive trend was also noticeable in the area of personal adjustment. At the end of the summer, sixth-graders saw themselves more favorably at school, more favorably at home, and had a higher goal set for an ideal self. They also viewed the Advancement School more favorably than when they entered.

5. The response of the seventh-grade students to the summer program was varied. Significant gains were evidenced in oral reading and on work-study skills. Significant regressions were noted in the areas of vocabulary and writing achievement.

6. Changes in personality variables for the seventh-graders were more consistent and pronounced than for the sixth-graders. Significant positive changes were observed in the areas of self-satisfaction, physical self, moral-ethical self, personal self, and total positive self. In other words, the seventh-graders viewed themselves much more positively at the end of the summer session than at the beginning. In the

area of social adjustment, the seventh-graders evidenced a significantly lower score at the end of the summer than at the beginning.

7. Comparison of data on sixth-, seventh-, and eighth-graders indicates that change effected by the Advancement School program is related to the age and the grade of the student. Sixth-graders tended to react more positively to the total program than either the seventh- or eighth-graders in both achievement and personality variables. Seventh-graders evidenced some change in achievement and considerable change in personality variables, while the pattern for eighth-graders was quite varied and quite inconsistent. This lends credence to the idea that the phenomenon of underachievement is much more easily remedied in younger adolescents and pre-adolescents than in older adolescents.
8. Further analysis of the data indicates that art experiences emphasizing creative expression of ideas contributed greatly to the improvement of self-concept in underachieving sixth- and seventh-graders. For those students who elected to take art during the summer, significant growth was observed in the areas of positive self, identity, self-satisfaction, behavior, moral-ethical self, personal self, and social

self. Growth trends were established in the areas of physical self and family self.

9. For those students who elected science during the summer, a definite growth trend in science achievement was established. This trend was much more pronounced for sixth-graders than for seventh-graders. These results indicate that an individualized approach to science instruction holds much promise for the under-achieving sixth- and seventh-grader.

III. RECOMMENDATIONS

The following recommendations are made with respect to this study:

1. The North Carolina Advancement School should continue its efforts to work with younger children. The results of this study indicate that the residential program has been more effective with pre-adolescents and young adolescents than with older adolescents.
2. Research identifying the characteristics of under-achievers at an earlier age should be undertaken. Therefore, it is recommended that the summer session of 1969 be devoted in part to working with rising fourth- and fifth-graders.
3. It is recommended that a group of students be admitted to the Advancement School for a full

academic year in the near future in order to ascertain the value of different lengths of treatment time.

4. Continued efforts should be made to relate data on selected groups to each other. It is hoped that this type of analysis will result in a longitudinal picture of the development of underachievement from its early stages and possibly lead to research concerning the onset of underachievement.
5. Continued effort in the refining of diagnostic procedures should be made. Particular emphasis should be placed on the identification of categories of learning problems, both academic and psychological. It is recommended that the North Carolina Advancement School Behavior Rating Scale be further developed and validated.
6. Further study of physical characteristics as they relate to underachievement should be undertaken. Particular emphasis should be given to the phenomenon of mixed dominance. Preliminary analysis of data indicated a high incidence of mixed dominance in underachieving sixth- and seventh-graders.
7. The student attending the North Carolina Advancement School is isolated temporarily from that life which he experienced in his home environment. There exists

a definite need to reduce this isolation and increase the contact between the student and his home and school during his stay at the Advancement School. It is recommended that steps be taken to provide the student with opportunities to visit his home school periodically during his stay at the Advancement School.

8. Closer contact between home and school should be established. As the North Carolina Advancement School begins to work with younger and younger children, the problem of homesickness will be greatly increased. In addition, data related to home environment are needed to further define the causes and characteristics of underachievement.

9. As data accumulate on the characteristics and causes of underachievement, more emphasis should be accorded various instructional and counseling programs which might prove to be beneficial to the remediation of underachievement. These instructional and counseling approaches should be systematically and thoroughly researched.

10. Further attempts in all academic and counseling areas of the program to investigate and develop self-concept in underachievers should be undertaken. The results of this study have yielded promising trends in this area.

11. The continued use of the assistant counselor is paramount to the total program. It is recommended that money be budgeted for this purpose on a continuing basis. Further, it is recommended that the role and responsibilities of assistant counselors be continually analyzed and evaluated in order to refine procedures and improve the effectiveness of this role.
12. Research in the area of art as it relates to enhancement of self-concept should be continued and refined in an attempt to further isolate those variables which most enhance the development of a positive self-concept.
13. Further analysis of existing data and the collection of additional data should be attempted to discern the discrepancies existing between the contributions of the art program and the industrial arts program as they relate to self-concept. This is deemed necessary since, theoretically, the two programs are quite similar in their objectives and activities. Of particular concern is the possibility that results reported in this study have occurred by chance.
14. Continued research in the area of individualizing science instruction should be attempted. Additional data related to self-concept as enhanced through science, critical thinking abilities, attitudes and interests, should be collected and analyzed.

Procedures for individualizing science instruction should be refined and expanded.

15. A comprehensive follow-up study of the students attending the Advancement School during the summer session, 1969, should be undertaken. Particular emphasis should be afforded academic and social adjustment to home and school.

16. As the program continues, more and more topics for research are being identified; therefore, it is recommended that an increase in the research budget be considered.

17. Efforts to disseminate information and research results should be increased both on a state level as well as on a national scale. It is recommended that additional money be budgeted for this purpose.

18. Expanded efforts should be made to enhance communication between the North Carolina Advancement School and the public schools and colleges and universities of the state.

BIBLIOGRAPHY

Crandall, Virginia, W. Kathovsky, and S. Preston. "Motivational and Ability Determinants of Young Children's Intellectual Achievement Behaviors." Child Development, 33: 643-661, 1962.

Fitts, William H. Tennessee Self Concept Scale. Nashville: Counselor Recordings and Tests, 1965.

The Gates Reading Survey (revised). Columbia University: Bureau of Publications, 1960.

Gilmore, John V. Gilmore Oral Reading Test. New York: Harcourt, Brace and World, Inc., 1951.

The North Carolina Advancement School Research Report, Spring, 1968. Winston-Salem, North Carolina, August, 1968.

Neale, Daniel C. and J. M. Proshek, "School Related Attitudes of Culturally Disadvantaged Elementary School Children." Journal of Educational Psychology, 58: 238-244, 1967.

Osgood, C. E., G. Soci, and P. Tannenbaum. The Measurement of Meaning. Urbana, Ill.: University of Illinois Press, 1957.

Science Research Associates Achievement Series: Work-Study Skills. Chicago: Science Research Associates, 1964.

Sequential Tests of Educational Progress: Science. Princeton, N. J.: Cooperative Test Division, Educational Testing Service, 1957.

Sequential Tests of Educational Progress: Writing. Princeton, N. J.: Cooperative Test Division, Educational Testing Service, 1957.

Slosson, Richard L. The Slosson Intelligence Test (SIT) for Children and Adults. East Aurora, N. Y.: Slosson Educational Publications, 1963.

Thorpe, Lewis P., W. W. Clarke, and E. W. Tiegs. California Test of Personality. Monterey, California: California Test Bureau (a division of McGraw-Hill Book Company), 1942.

APPENDIX

TABLE 8

DESCRIPTIONS OF THE SUB-SCALES
ON THE TENNESSEE SELF CONCEPT SCALE[a]

1. Self-Criticism. This scale consists of mildly derogatory statements that most people admit as being true of them. Individuals who deny most of these statements are probably overly defensive and tend to deliberately present a favorable picture of themselves. Higher scores tend to indicate a normal openness and capacity for self-criticism.

2. Total Positive. This scale reflects the over-all level of self-esteem. Persons with high scores tend to like themselves, feel that they are persons of value and worth, have confidence in themselves, and act accordingly. Persons with low scores are doubtful about their own worth, see themselves as undesirable, often feel anxious, depressed, and unhappy, and have little faith or confidence in themselves.

3. Identity. This scale assesses how the individual sees himself.

4. Self-Satisfaction. This scale assesses the way an individual describes how he feels about the self he perceives. In general, scores reflect the level of self-satisfaction or self-acceptance.

5. Behavior. This assesses what the individual says he does or how he acts, i.e., a measure of the individual's perception of his own behavior.

6. Physical Self. Assesses the person's view of his body, his health, and his physical appearance.

7. Moral-Ethical Self. This scale assesses the individual's perception of his being a "good" or "bad" person, and his moral worth.

8. Personal Self. An assessment of the individual's sense of personal worth and his general feelings of adequacy as a person.

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[a]Tennessee Self Concept Scale, Nashville: Counselor Recordings and Tests, 1965.

TABLE 8 (Continued)

9. Family Self. This scale measures the person's feelings of adequacy, worth, and value as a family member.

10. Social Self. Scores on this scale reflect the person's sense of adequacy and worth in his social interaction with other people in general.

11. Variability. This is a simple measure of variability or inconsistency from one area of self-perception to another.

12. Distribution. Scores on this scale may be interpreted as a measure of the certainty about the way a person sees himself. High scores mean that the individual is very definite about the way he sees himself, while low scores mean just the opposite.

TABLE 9

ROLES AND RESPONSIBILITIES
OF COUNSELORS AND ASSISTANT COUNSELORS

Role of the Counselor in the Dormitory

1. The counselor will be responsible for all activities and conditions of his house.

   a. He is the director of all experiences of his boys during their stay at NCAS.

   b. He is responsible from the time students arrive until they leave while enrolled at NCAS.

   c. He is a professional who is responsible for counseling with his boys as the need arises.

2. To aid the counselor in discharging his duties, an assistant counselor has been assigned to each counselor. The assistant counselor is directly responsible to the counselor for all responsibilities in the dormitory, in supervising and controlling boys, and in supervising and discharging recreational responsibilities.

   a. The counselor is responsible for working out with his assistant a list and schedule of the assistant's duties.

   b. The counselor is responsible for supervising and evaluating the assistant's quality of work.

   c. The counselor is responsible for consulting with his assistant in all matters pertaining to the assistant's role and the way in which this role is implemented.

TABLE 9 (Continued)

Role of the Assistant Counselor

1. The assistant counselor has been employed by NCAS and assigned to a house. The assistant is directly responsible to the counselor of that house for discharging all his duties.

2. The assistant counselor's working hours during the week will be from 5 p.m. until after breakfast the following morning. During these hours he is responsible for supervising the boys of his house in all activities, for seeing to it that the boys observe house hour and lights out, for waking the boys in the morning at the specified time, for the general cleanliness of all rooms, and for all other problems related to the operation of life in the dormitory.

3. Specifically, the duties of the assistant counselor are the following:

   a. To wake up the boys of his house at 6:45 a.m. on school days.

   b. To see that each boy of his house is on the hall during house hour from 9 p.m. to 10 p.m.

   c. To see that regulations governing house hour are adhered to as outlined by the counselor.

   d. To see that the boys are in bed at lights out. For Sunday through Thursday evenings, the time for lights out is 10 p.m.

   e. To supervise the daily straightening and cleaning of rooms. This must be done prior to breakfast every day.

TABLE 9 (Continued)

f. To supervise the boys in a thorough cleaning of rooms on Saturdays between 1 p.m. and 2 p.m. If a counselor is on duty, he must assume this responsibility.

g. To inspect each room thoroughly on Sundays prior to church. In addition, the administration will inspect rooms daily.

h. To supervise laundry procedures.

i. To be aware of health and safety procedures.

j. To maintain proper control of boys in dormitory and recreational activities. Serious disciplinary problems should be referred immediately to the counselor involved.

k. To supervise recreation activities on and off campus as scheduled by the director of recreation. This includes supervision of recreation hall, student lounge, gym, driving of vehicles, and outside play areas.

l. To maintain general cleanliness in all dormitory and recreation areas. Food and drink purchased in the school store must not be taken from that area.

m. To meet with counselor at least once each week to discuss problems related to above responsibilities.

n. To observe guidelines for weekend responsibilities.

o. To be prompt in discharging all responsibilities.

TABLE 10

NORTH CAROLINA ADVANCEMENT SCHOOL
BEHAVIORAL RATING SCALE

DATE_____

OBSERVATIONS OF STUDENT NO._____

DESCRIPTION OF ENCOUNTER: SETTING_____
PARTICIPANTS_____
INITIATING FACTORS_____

	REACTION TO ENCOUNTER	INTERACTION WITH PEERS	INTERACTION WITH ADULTS	
DEPENDENT	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	INDEPENDENT
SUBMISSIVE	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	DOMINANT
WITHDRAWN	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	OUT-GOING
UNCOOPERATIVE	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	COOPERATIVE
HOSTILE	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	FRIENDLY
TENSE	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	RELAXED
DEPRESSED	1 2 3 4 5	1 2 3 4 5	1 2 3 4 5	ELATED

OBSERVED BEHAVIOR: _____SOCIAL _____EMOTIONAL _____ACADEMIC

_____

_____

_____

_____

_____